

Entrepreneurship Education and Entrepreneurial Intention among University Students: The Roles of Entrepreneurial Mindset, Digital Literacy, and Self-Efficacy

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Abstract

The objective of this study is to determine the impact of entrepreneurship and digital literacy on the inclination of college students to initiate their own business ventures. Furthermore, the study aims to examine the role of business attitude and self-efficacy as mediators and moderators. The data utilized in this investigation was sourced from a sample of 536 authentic individuals and only pertains to Indonesia. The acquired data is analyzed using partial least squares structural equation modeling to evaluate the research model. The findings indicate that possessing a creative mentality, receiving formal education in entrepreneurship, and demonstrating proficiency in technology can significantly enhance an individual's inclination to embark on an entrepreneurial endeavor. Moreover, the entrepreneurial mindset serves as a bridge between the acquisition of business knowledge with the desire to become an entrepreneur. The results indicate that self-efficacy has a positive impact on the relationship between the aspiration to become an entrepreneur and having an entrepreneurial mindset. The unexpected finding revealed that self-efficacy diminishes the link between acquiring knowledge about entrepreneurship and the inclination to establish a business. Moreover, the results suggest that self-efficacy does not modify the correlation between digital knowledge and the inclination to start one's own business. The findings of the study have important implications for both the theoretical comprehension and practical execution of establishing and achieving company objectives.

Keywords: *Entrepreneurship Education, Entrepreneurial Intention, Entrepreneurial Mindset, Digital Literacy, Self-Efficacy.*

Introduction

Higher education graduates opting to seek employment rather than creating jobs is an important factor contributing to Indonesia's rising educated unemployment rate (Amalia & von Korflesch, 2021; Yunitasari et al., 2021). In February 2024, the number of unemployed individuals in

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Indonesia reached 149.38 million, an increase of 2.76 million compared to February 2023. These statistics are alarming. Consequently, it is increasingly difficult for university graduates to secure employment. Open unemployment is indicated by the lack of employment alongside active job-seeking. Given this substantial growth, it is essential to address this issue collectively. Promoting entrepreneurship can serve to mitigate the rising unemployment rates (Indonesia Central Bureau of Statistics, 2024).

Considering these circumstances, a potential solution to the unemployment issue could involve allocating resources toward entrepreneurial endeavors targeting both educated demographics and the broader public. Such programs are expected to create job opportunities, thereby alleviating the burden on the state and reducing the unemployment rate (Restiadi et al., 2021). Educational institutions have a crucial role in boosting entrepreneurial activity and facilitating economic expansion inside a country (Fichter & Tiemann, 2018; Nowiński et al., 2019).

It is our collective responsibility to strive for the improvement of the nation's economy and overall welfare (Rai et al., 2019; Zhang et al., 2019). Indonesia witnesses a substantial annual influx of graduates from universities and the private sector, who possess the potential to enhance the quality of its workforce (Amalia & von Korflesch, 2021). This influx is expected to yield considerable economic benefits for the country. Student entrepreneurship must be a major driving force for Indonesia's economy (Klofsten et al., 2019; Sahoo & Panda, 2019). Moreover, a significant feature of industrialized countries is a considerable percentage of the populace involved in entrepreneurial endeavors (Bonyadi & Sarreshtehdari, 2021). However, in Indonesia, the entrepreneurial intention remains low (Astiana et al., 2022; Wardana, Handayati, et al., 2020), and the unemployment rate is high (Maydiantoro et al., 2020; Shah et al., 2020).

Universities play an important role in developing the fundamental skills and abilities needed for entrepreneurship, which are subsequently demonstrated through entrepreneurial actions (Gümüşay & Bohné, 2018; Hahn et al., 2020; Hapuk et al., 2020). Evidence suggests that educational institutions, particularly those that integrate entrepreneurial initiatives into their curricula, can considerably affect students' inclination to establish their own enterprises by creating innovative and inventive programs (Boldureanu et al., 2020; Sekerbayeva et al., 2023). Several campuses have made efforts to cultivate entrepreneurial knowledge by offering entrepreneurship courses as compulsory university-level classes (Mustafa et al., 2022). These courses aim to foster entrepreneurial intention, character, and mindset among students (Liu et al., 2020). Entrepreneurial

intention refers to an individual's desire and determination to become an entrepreneur and develop an entrepreneurial mindset. Understanding this intention is key to comprehending the entrepreneurial process, as it shapes individuals' actions as entrepreneurs (Du Toit, 2023; Gieure et al., 2020; Van Gelderen et al., 2018). The initial stage in establishing a firm, which is usually a protracted and intricate undertaking, involves fostering the aspiration to become an entrepreneur (Marta et al., 2019). Therefore, entrepreneurial intention must be nurtured and developed from the outset to facilitate entrepreneurial action.

Entrepreneurship education, when accompanied by a genuine intention, has the capacity to profoundly alter core beliefs and attitudes. Nevertheless, in Indonesia, a significant number of students continue to exhibit a lack of enthusiasm towards entrepreneurship, mostly because they possess a limited comprehension of its fundamental concepts. The students' lack of understanding of business operations might have a significant impact on their attitudes, self-confidence, and inclinations to become entrepreneurs (Khamid et al., 2019). Such misunderstandings contribute to mental barriers like fear of failure and risk aversion (Wardana, Narmaditya, et al., 2020). Consequently, a considerable number of Indonesian graduates maintain a preference for seeking employment rather than creating job opportunities, perceiving employment as more secure than entrepreneurship (Aransyah et al., 2023; Suaidy & Lewenussa, 2019).

Individuals with advanced digital literacy skills can proficiently utilize a diverse range of technologies and access vast amounts of information from the internet, enabling effective navigation and adaptation to current and future technologies regardless of their nature or advancements. This proficiency is crucial in contemporary entrepreneurship, where trends such as online stores, social media-based advertising and business, non-cash payments (e-wallets), and other digital ventures are prominent manifestations of digital literacy (Ganefri et al., 2022). In addition to traditional entrepreneurial requirements like capital, social relationships, and opportunities, self-confidence or self-efficacy is a vital factor in determining an entrepreneur's potential to attain success in their commercial endeavors (Srimulyani & Hermanto, 2021).

Researchers are keen to assess the impact of many factors on the entrepreneurial aspirations of college students, with a particular emphasis on digital literacy and self-efficacy. The study is to investigate the impact of teaching students in entrepreneurship and enhancing their digital literacy on their mentality, self-efficacy beliefs, and entrepreneurial aspirations. Despite some existing research, there remains a lack of comprehensive investigation into many of these factors,

necessitating prompt and collaborative research efforts. The anticipated outcomes will provide data to steer policy determinations, particularly regarding entrepreneurial education in tertiary educational establishments.

Theoretical foundations

This study is based on the principle of planned behavior (TPB) (Ajzen, 1991), which focuses on how an individual's beliefs and behaviors affect their intentions, ultimately shaping their actual actions. According to TPB, behavioral intention is influenced by attitudes towards the behavior, subjective norms or perceived social influences, and perceived behavioral control (Ajzen, 1991). There is no text provided. Furthermore, Bandura (1986) proposed social cognitive theory, which serves as another fundamental theory that explains how individuals acquire knowledge and mold their actions through social exchanges. This theory emphasizes the significance of observation, imitation, and role models in the formation of human cognition and behavior. Through observation, individuals acquire new knowledge and skills, and form expectations about the outcomes of their behaviors. The concept of reinforcement further affects the likelihood of future behavioral repetition. Social cognitive theory has profoundly affected the understanding of social interaction dynamics and the formation of human behavior across disciplines such as clinical psychology, education, and the social sciences.

Applying social cognitive theory in research provides valuable insights into how providing technical literacy and entrepreneurial skills to college students can affect their inclination to start their own businesses. According to this theory, students acquire necessary entrepreneurial abilities through formal and informal educational programs. Additionally, enhancing their digital literacy enables access to extensive knowledge and ideas, further empowering their entrepreneurial potential.

The entrepreneurial mindset serves as a connection between digital literacy, entrepreneurial objectives, and entrepreneurship education. Individuals who possess an entrepreneurial mindset exhibit the appropriate cognitive patterns, principles, and perspective toward the world. There is a possibility that students' business objectives will have a higher likelihood of success if they adopt a mindset similar to that of optimistic entrepreneurs. Lessons on digital literacy and entrepreneurship have a greater likelihood of influencing students' aspirations to establish their own firms. This is because pupils who possess a strong conviction in their own capabilities are more inclined to take risks and effectively overcome business challenges.

This investigation utilizes social cognition theory as the fundamental framework to comprehend the impact of social interactions, education, and digital literacy on college students' aspirations to initiate their own firms. Additionally, the research investigates the impact of students' entrepreneurial goals, digital technology proficiency, and the moderating influence of entrepreneurial mentality and self-confidence on understanding the components and dynamics that influence this relationship.

The use of TPB has the potential to impact entrepreneurship education by providing individuals with crucial knowledge and skills necessary for success in entrepreneurial settings. Investments in entrepreneurship education are shown to cultivate positive attitudes and enhance perceived behavioral control, thereby boosting entrepreneurial intentions (Li et al., 2023). Moreover, TPB's application can considerably enhance digital literacy by imparting individuals with the necessary skills to adeptly utilize technology in their entrepreneurial pursuits.

Acquiring a comprehensive understanding of digital skills can empower individuals, enhancing their agency and driving their engagement in entrepreneurial pursuits (Mustain et al., 2023). The TPB plays an essential role in shaping individuals' perspectives on entrepreneurship, affecting their willingness to take risks, demonstrate innovation, effectively manage projects, and their perceptions of behavioral control and attitudes toward entrepreneurship.

An individual with a strong entrepreneurial mindset tends to experience greater autonomy and maintain optimistic attitudes, which in turn increases their inclination toward entrepreneurship (Afiat et al., 2023). TPB affects an individual's self-efficacy by shaping their confidence in executing specific behaviors. Strong self-efficacy, fostering an optimistic outlook on entrepreneurship and enhancing feelings of personal agency, considerably affects the propensity to pursue entrepreneurial endeavors (Widiasih & Darma, 2021).

Entrepreneurship Education

Introducing entrepreneurship to students is a critical endeavor that can inspire aspiration and optimism toward entrepreneurial pursuits through cognitive processes (Ganefri et al., 2017, 2020; Lang & Liu, 2019). The knowledge obtained from educational institutions, namely in the field of cognitive development, is essential for cultivating an entrepreneurial attitude and encouraging an interest in entrepreneurship (Ganefri et al., 2021; Yulastri et al., 2018). A heightened interest in entrepreneurship among students positively impacts economic development by shifting mindsets

from job seekers to job creators, thereby potentially reducing unemployment rates. Interest in entrepreneurship can be both innate and cultivated (Anjum et al., 2020).

Digital Literacy

Modern demands have expanded the definition of literacy, leading to the emergence of various new literacies, particularly in the realm of technology (Gqoli, 2024; Orakova et al., 2024). These encompass skills in information literacy, computer literacy, media literacy, and social media literacy, all evolving in response to the rapid transformations brought about by the internet. Digital literacy, also known as e-literacy, is a pivotal concept that involves "the evaluation and application of new data from the digital environment, and the ability to read, interpret, and create media through digital manipulation" (Moyo et al., 2022; Orrensalo et al., 2022). Digital literacy is necessary for effectively engaging with digital tools and gadgets. In the realm of entrepreneurship, promoting innovation and entrepreneurial pursuits requires business owners to have the essential abilities to efficiently employ digital tools, platforms, and infrastructure (Hamakali & Josua, 2023; Neumeyer et al., 2020).

Entrepreneurship Mindset

The notion of mentality emerged within the realm of cognitive psychology, where it pertains to how individuals perceive and engage with their environment, a topic actively studied (Mathisen & Arnulf, 2013). Within the realm of entrepreneurship, the entrepreneurial mindset is characterized as the capacity to contemplate, execute, and inspire oneself when confronted with significant ambiguity (Cui et al., 2021). This deeper cognitive phenomenon underscores individuals' unique engagement in entrepreneurial activities, reflecting their entrepreneurial mindset (Cui et al., 2021).

Entrepreneurship Intention

According to Singh & Dwivedi (2022), entrepreneurship intention refers to the act of intending to engage in entrepreneurial activities. Ajzen (1991) defines intention as the decision to either undertake or refrain from a specific activity, reflecting the motivational factors and their impact on behavior. Intentions demonstrate individuals' sincerity and commitment to implementing their actions. The measurement of entrepreneurship intention is currently a topic of research interest. Previously, challenges such as lack of capital, resources, and skilled labor were perceived as important barriers to starting and expanding entrepreneurial ventures. However, initiatives established by relevant authorities have elevated entrepreneurship intention to an important

consideration. The choice to embark on an entrepreneurial path is frequently influenced by individuals' aspirations to establish a firm (Alferaih, 2022; Baihaqi & Wahidmurni, 2019).

Self-Efficacy

Self-efficacy is commonly recognized as a dependable indicator of an individual's actions (Bandura, 1977). Self-efficacy refers to an individual's confidence in their capacity to successfully accomplish a specific objective or goal (Tumasjan & Braun, 2012). People who have strong self-efficacy are more likely to approach challenges with confidence and persevere in their efforts to accomplish their objectives (Bandura, 1977). Ajzen (1991) Indicates that self-efficacy can be domain-specific and influenced by perceptions of factors that either support or hinder control, as well as the assessment of the effectiveness of a desired behavior.

Self-efficacy refers to the ability to confidently believe in one's own capabilities, particularly within the context of entrepreneurship (Neneh, 2020). It is hypothesized that entrepreneurship education and digital literacy can affect individuals' intentions to become entrepreneurs by bolstering their confidence in their ability to succeed in such endeavors. It is additionally theorized that self-efficacy functions as a moderating element in this association. The advantages of studying entrepreneurship and digital literacy for aspiring entrepreneurs are significantly amplified when individuals possess a robust belief in their capabilities. This cultivates a favorable mindset towards entrepreneurship and enables individuals to exert more influence over their choices (Doan Thi Thanh & Viet, 2023).

When individuals study entrepreneurship, their likelihood of successfully establishing their own business is considerably enhanced by a strong sense of self-efficacy. This confidence stems from their belief in effectively applying the skills and knowledge they acquire (Wijangga & Lanang Sanjaya, 2019). Those with robust self-efficacy are more inclined to trust in their capacity to implement business strategies and manage the challenges inherent in starting a business (Sudjadi et al., 2022). Self-efficacy also plays a vital role in affecting the relationship between the desire to start a business and proficiency in using technology. While proficiency in digital literacy is advantageous for business establishment, the benefits are amplified when accompanied by a strong belief in one's abilities (Ferreira-Neto et al., 2023). This belief translates into a conviction that one can effectively harness technology in business operations (Wardana et al., 2024), empowering individuals to utilize digital tools and platforms proficiently for business management.

Hypothesis development

According to Fayolle & Liñán (2014), entrepreneurship education enhances students' positive attitudes and intentions toward entrepreneurship. Additionally, a meta-analysis by Bae et al. (2014), Establishes a robust correlation between the intention to engage in entrepreneurial activities and receiving education in entrepreneurship. Digital literacy is crucial in the context of online entrepreneurship, where internet entrepreneurship intention refers to the personal belief and commitment to start a new online firm in the future (Hejazinia, 2015). Engaging in business education and acquiring technological skills can further stimulate individuals' aspirations to become entrepreneurs. Developing an entrepreneurial mindset is also recognized as beneficial in this context (Peltier & Scovotti, 2010). Therefore, the following hypotheses have been formulated based on these insights:

Digital tools and data analysis capabilities, when combined with entrepreneurial thinking, have the potential to unlock innovative solutions to complex challenges. Digital literacy empowers entrepreneurs to leverage online platforms to conduct thorough market research, identify emerging trends, and tailor their offerings to meet the evolving needs of their target audience (Khan, 2022). Digital tools also streamline various business processes, from marketing and sales to customer relationship management and financial operations, enabling entrepreneurs to optimize efficiency and focus on core strategic priorities (Beliaeva et al., 2019). Therefore, the following hypotheses have been formulated based on these insights:

H1: There is a significant relationship between digital literacy and entrepreneurship education.

Entrepreneurial learning and the development of digital literacy, including artificial intelligence literacy, are crucial in this context (Hamburg et al., 2019). Acquiring the cognitive, sociological, and emotional skills to handle digital environments allows entrepreneurs to capitalize on the opportunities presented by new technologies and platforms, ultimately leading to the creation of new value (Hamburg et al., 2019). This digital transformation has democratized entrepreneurship, opening doors for previously excluded groups (Bican & Brem, 2020). Therefore, the following hypotheses have been formulated based on these insights:

H2: There is a significant relationship between digital literacy and entrepreneurship mindset.

Entrepreneurship education classes exhibited a noticeable increase in their entrepreneurial mindset compared to those who were not. This suggests that structured education plays a crucial role in fostering the attitudes and skills necessary for entrepreneurship (Rodriguez & Lieber, 2020). The entrepreneurial mindset encompasses various dimensions, including opportunity orientation, innovativeness, proactiveness, self-confidence, and risk tolerance (Sun et al., 2023). Education in entrepreneurship helps cultivate these traits, which are essential for success in business ventures (Manafe et al., 2023). The relationship extends to entrepreneurial intentions, with research indicating that a robust entrepreneurial mindset, fostered through education, significantly correlates with the likelihood of pursuing entrepreneurial activities. Therefore, the following hypotheses have been formulated based on these insights:

H3: There is a significant relationship between entrepreneurship education and entrepreneurship mindset.

Entrepreneurial intention is significantly and positively influenced by digital literacy. This implies that the intention to establish a business or participate in entrepreneurial activities increases in tandem with the growth of digital literacy (Mulyono et al., 2023). In a study that investigated the impact of digital literacy on entrepreneurial behaviors through entrepreneurial intentions, it was determined that digital literacy has an indirect effect on entrepreneurial behavior through entrepreneurial intention (Islami, 2019). This suggests that entrepreneurial behavior is influenced by digital literacy, which in turn affects entrepreneurial intention. A study that concentrated on online entrepreneurial intentions discovered that digital literacy has a beneficial impact on these intentions (Setyawati et al., 2022). Therefore, the following hypotheses have been formulated based on these insights:

H4: There is a significant relationship between digital literacy and entrepreneurship intention.

Entrepreneurship education can have different effects on people's plans to start their own business, depending on things like their country, gender, and whether or not their family has a history of business (Hattab, 2014). According to Montes et al. (2023), a study in four Latin American countries found that these sociodemographic factors affected people's plans to start their own business in different ways. To give you an example, studies have shown that teaching students about entrepreneurship can have a big effect on their desire to start their own business (Dey et al., 2024). Therefore, the following hypotheses have been formulated based on these insights:

H5: There is a significant relationship between entrepreneurship education and entrepreneurship intention.

Studies have found a link between having a business attitude and wanting to become an entrepreneur. According to Akbari et al. (2024), for example, businesspeople with a strong entrepreneurial attitude are more likely to want to start their own business. There is proof that the mindset of an entrepreneur is linked to the desire to become an entrepreneur. For example, Cater et al. (2023) found that students with a better entrepreneurial mindset were more likely to want to start their own business than students without such a mentality. Situational factors can change how a business attitude affects the desire to become an entrepreneur. For example, during the pandemic, students with a strong entrepreneurial attitude were more likely to develop entrepreneurial plans due to the economic and social changes (Prayoga et al., 2023). Therefore, the following hypotheses have been formulated based on these insights:

H6: There is a significant relationship between entrepreneurship mindset and entrepreneurship intention.

There is a link between entrepreneurship education and entrepreneurial intention. This means that entrepreneurship education helps the entrepreneurial mindset, which then makes it more likely that people will want to start their own business (Jiatong et al., 2021). Entrepreneurship schooling makes people more likely to think like entrepreneurs and want to be entrepreneurs. Studies have shown that teaching people about entrepreneurship makes them more entrepreneurial, which in turn makes them more likely to start their own business (Saptono et al., 2020). Sun et al. (2023) say that the entrepreneurial attitude acts as a bridge between learning about entrepreneurship and wanting to start your own business. Learning about entrepreneurship makes people more willing to be entrepreneurs, which in turn makes them more likely to want to start their own business. Therefore, the following hypotheses have been formulated based on these insights:

H7: Entrepreneurship mindsets mediate the relationship between entrepreneurship education and entrepreneurship intention.

The entrepreneurial mindset acts as a bridge between digital literacy and the intention to engage in entrepreneurship. As a result, digital literacy strengthens the entrepreneurial mindset, leading to a higher likelihood of having entrepreneurial intentions (Nguyen et al., 2024). The presence of an entrepreneurial attitude is directly linked to digital literacy, which in turn has a beneficial effect on the intention to engage in entrepreneurial activities. A study found that digital literacy helps clarify

entrepreneurial attitude and entrepreneurial intention, indicating a strong positive association between digital literacy and entrepreneurial mindset, and hence with entrepreneurial intention (Mustain, 2023). Therefore, the following hypotheses have been formulated based on these insights:

H8: Entrepreneurship mindsets mediate the relationship between digital literacy and entrepreneurship intention.

Figure 1 illustrates the model proposed in this study, where entrepreneurship education, entrepreneurial mindset, and digital literacy are hypothesized to enhance students' beliefs in their ability to succeed. Ajzen (1991), noted similar factors affecting the development of control beliefs (self-efficacy), including prior experiences, information from others, personal experiences, and various facilitators and inhibitors. Empirical studies, such as Miao et al. (2017), research has demonstrated that entrepreneurial self-efficacy may be improved through entrepreneurship education, the development of an entrepreneurial mentality, and the acquisition of digital literacy skills. Companies that have a strong belief in their talents are more inclined to establish ambitious goals for expansion and put in more effort to accomplish them (Newman et al., 2019). Abundant research provides strong evidence for the substantial influence of creative self-efficacy on several elements that directly and indirectly contribute to the success of a firm and the inclination to start one's own business.

The association between an entrepreneurial attitude and an entrepreneurial aim is mediated by self-efficacy, these findings are supported by studies that employed a moderated mediation model to enhance the connection between self-esteem and entrepreneurial intent (Akbari et al., 2024; Li et al., 2023). Additionally, other studies examined how entrepreneurial self-efficacy acted as a mediator between entrepreneurial education, mindset, creativity, and entrepreneurial intent (Jiatong et al., 2021). Consequently, drawing from these observations, the subsequent hypotheses have been formed:

H9: Self-efficacy moderates the relationship between entrepreneurship mindset and entrepreneurship intention.

A study revealed that entrepreneurial self-efficacy plays a crucial role in mediating the relationship between an individual's attitude towards initiating their own firm and their actual intention to do so. This implies that there exists a favorable association between self-efficacy and the inclination to embark on entrepreneurial endeavors (Cong Doanh, 2021). Entrepreneurship education, as per

the Moderated Approach, enhances the connection between one's belief in their ability to succeed as an entrepreneur and their ambition to engage in entrepreneurial activities. Self-efficacy significantly influences the extent to which entrepreneurship education facilitates entrepreneurial intentions (Dar et al., 2023). Self-efficacy plays a moderating role in the relationship between entrepreneurship education and entrepreneurial intention. Self-efficacy amplifies the beneficial impact of entrepreneurship education on promoting entrepreneurial goals, as stated by Shah et al. (2020). Consequently, drawing from these observations, the subsequent hypotheses have been formed:

H10: Self-efficacy moderates the relationship between entrepreneurship education and entrepreneurship intention.

Ip (2024) found that self-efficacy plays a role in influencing the connection between digital literacy and entrepreneurial intentions, social entrepreneurial intentions, and nascent behaviors in mass communication students and practitioners. According to Doan Thi Thanh et al. (2023), digital literacy encourages people to have entrepreneurial ambitions, but it is self-efficacy that actually increases the likelihood of taking action on those aspirations. Proficiency in digital skills enhances productivity and fosters creativity. The study demonstrated that possessing digital literacy skills enables to effectively adjust to evolving market conditions and utilize data for making informed decisions, which is crucial for achieving entrepreneurial success (Farrukh et al., 2018). This research demonstrates that self-efficacy plays a moderating role in the relationship between digital literacy and entrepreneurship intention, enhancing the positive effects of digital literacy. Consequently, drawing from these observations, the subsequent hypotheses have been formed:

H11: Self-efficacy moderates the relationship between digital literacy and entrepreneurship intention.

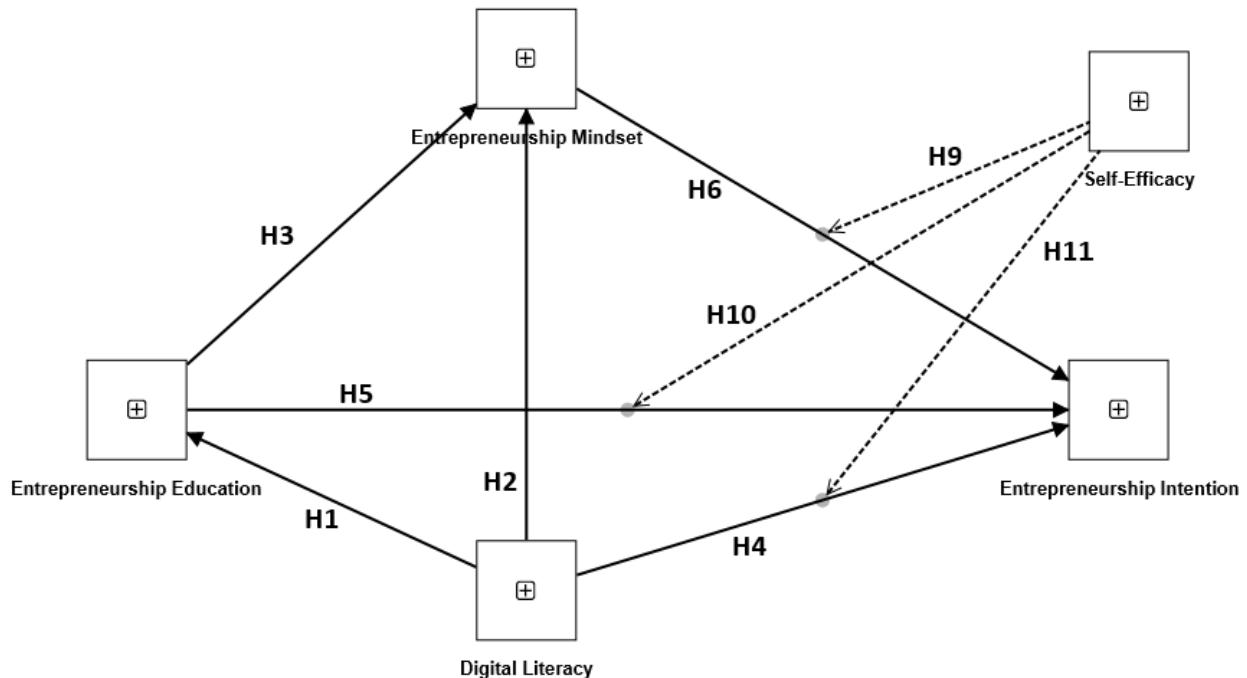


Figure 1. Hypothesis Models

Method

Design

In this study, a quantitative research approach with convenience sampling was employed using a questionnaire administered through Google Forms to obtain information about the variables needed in this study including Entrepreneurship Education, Entrepreneurial Intention, Entrepreneurial Mindset, Digital Literacy and Self-Efficacy. An online survey was conducted among eligible students from Universitas Negeri Padang who had previously taken an entrepreneurial course. The university has a total enrollment of 5,721 students. Due to the large population size, a convenience sampling method was utilized. The tools used are measure, validation where convergent validity and discriminant validity and hypothesis analysis. and the tools used in this study are SPSS and SmartPLS tools. Selecting an appropriate sample size is crucial as a small sample may not adequately represent the entire population, potentially leading to ambiguous findings.

Samples

The study involved 536 students from Universitas Negeri Padang, Indonesia, who participated by completing a web-based questionnaire through website tools. This questionnaire included

statement items representing each variable studied. All collected data from the respondents who completed the questionnaire are considered usable, as the distribution process was carefully managed. The instruments were distributed to all 536 individuals, and all were returned. The study utilized convenience sampling, where data were voluntarily submitted by members of the general community.

This method enables any individual willing to provide the necessary information to participate in the study, provided they are willing to disclose it. Table 1 outlines specific details of the sample: 168 (31.3%) respondents were male, while 368 (68.7%) were female. Regarding age, 478 (89.2%) respondents were aged 20–22 years, with 58 (10.8%) falling into the 17–19 years age range.

Table 1

Participants Demography

Gender	Number	Percentage
Male	168	31,3%
Female	368	68,7%
Total	536	100,00%
Age (Years Old)		
17 – 19	478	89,2%
20 – 22	58	10,8%
Total	536	100,00%

Measures

The questionnaire functioned as the principal means of data collection in this study. The assessment instruments utilized were predominantly acquired from prior studies. Every instrument underwent thorough scrutiny by experts to guarantee its appropriateness and precision, hence minimizing any possible biases. The questionnaire was specifically created to acquire supplementary data on the individuals being studied, with the objective of obtaining accurate information on a range of topics. The study incorporated up to five questions on entrepreneurial mindset from sources such as Cui et al. (2021) and Mathisen & Arnulf (2013). Additionally, four items on entrepreneurial intention were adapted Robledo et al. (2015). In entrepreneurial education as many as five items were adapted from (Nabi et al., 2018; Nowiński et al., 2019). Furthermore, digital literacy as many as five items were adapted from (Lee, 2014; Marsh, 2021; Sadaf & Gezer, 2020). Lastly, self-efficacy also as many as five items were adapted from (Wang et al., 2019; Wilson et al., 2007). A Likert scale questionnaire was created to evaluate the measurement items

in the study. The questionnaire used a five-point scale, ranging from strongly disagree to strongly agree, for each item. The study employed structural equation modeling (SEM) to examine the interrelationships among the five variables. The survey of twenty-one questions, each linked to a unique independent variable.

The Smart-PLS program evaluates the factor loading values of each item to verify their precision. Convergent validity was assessed by computing the average variance extracted (AVE) using standardized item loadings in SmartPLS. The heterotrait-monotrait ratio of correlations (HTMT) was utilized to evaluate the criterion and predictor validity. The internal consistency of the research constructs was assessed by employing Cronbach's alpha and composite reliability (CR). The quantity of items linked to each variable is presented below.

Validation

The data were analyzed using SmartPLS version 4, which integrates Structural Equation Modeling (SEM) and Partial Least Squares (PLS) methodologies. Typical difficulties related to Ordinary Least Squares (OLS) regression analysis involve restricted data accessibility, absent values, non-normal data distribution, and problems with multicollinearity. PLS was selected as the optimal solution to properly tackle these difficulties. The study utilized SmartPLS to ensure the precision of both the structural models and measurement models. The statistical analysis was conducted in two steps.

Prior to moving on, it was essential to verify the dependability and precision of both the study's theoretical framework and its measurement approach. We employed average variance extracted (AVE) and standard item loading approaches to ensure the accuracy of the measuring instruments. In order to assess the distinctiveness of variables, we utilized the Heterotrait-Monotrait Ratio of Correlations (HTMT) method. In addition, Cronbach's alpha and CR were employed to evaluate the internal consistency and reliability of the models.

In the second section, we assessed the statistical significance of the structural relationships between the research variables by utilizing 5,000 samples and employing the bootstrap approach. Table 2 presents comprehensive measurements of the weights of every tool utilized in this inquiry. The table demonstrates convergent validity by indicating that all indicator factor loadings on their corresponding latent constructs exceed 0.60.

Table 2
Construct Item Loadings

Indicators	Outer Loadings
<i>Entrepreneurial Mindset (EM)</i>	
I am open-minded in solving a problem	0.775
I can solve the problem with the best solution	0.760
I have a priority scale in solving problems	0.728
I can always see opportunities from an activity	0.792
I understand the network is more important than money as business capital	0.805
<i>Entrepreneurship Education (EE)</i>	
Entrepreneurship courses in the form of entrepreneurship projects	0.857
Lectures lead to direct cases at relevant companies	0.805
In entrepreneurship learning, there is a product development process	0.843
Entrepreneurship education provides increased entrepreneurial capacity	0.764
<i>Digital Literacy (DL)</i>	
I also have a web page for my business product and introduction purposes	0.780
I am updating my social media accounts with business content for marketing purposes	0.792
I share videos on social media accounts to support my business	0.763
I also share photos on social media accounts to support my business	0.791
<i>Entrepreneurial Intention (EI)</i>	
I want to be an entrepreneur	0.721
I joined the entrepreneurial community/marketplace	0.793
I learn entrepreneurship from various sources	0.753
Studying entrepreneurship can broaden your prospects and career options	0.773
<i>Self-Efficacy (SE)</i>	
I can solve the problem	0.763
I can be a leader	0.723
I can be creative	0.705
I can get people who agree with me	0.782

The researchers utilized a conventional SEM technique known as PLS-SEM to identify the PLS bootstrapping factors. This approach employed resampling techniques to obtain measurements. Cronbach's alpha, AVE, composite reliability, and standardized item loadings were employed to evaluate the precision and reliability of the data for each construct. Table 3 shows that Cronbach's alpha scores and the total scores exceed 0.70 (Hair Jr et al., 2017). The results show convergent validity, as all latent construct factor loadings are above 0.60, and the AVE for all constructs exceeds 0.50.

Convergent validity

Convergent validity refers to the degree to which the responses on a test or instrument are strongly correlated with the responses on other tests or instruments that measure similar concepts (Chin & Yao, 2014). It guarantees that the measure is correlated with other measures of the identical

construct. The main objective of convergent validity is to authenticate research findings by demonstrating that various variables that measure the same concept are interconnected in anticipated manners (Chin & Yao, 2014). Establishing construct validity is essential for ensuring that the findings of a study accurately represent the construct under investigation. Convergent validity, assessed through Cronbach's alpha, composite reliability, AVE, and factor loadings, was evaluated in this study (Ramayah et al., 2016). The results are presented in Table 3, which includes Cronbach's alpha coefficient, composite reliability score, and AVE score.

Table 3

Cronbach's Alpha, Composite Reliability, AVE

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Digital Literacy	0,819	0,823	0,582
Entrepreneurship Education	0,876	0,884	0,626
Entrepreneurship Intention	0,822	0,826	0,531
Entrepreneurship Mindset	0,861	0,860	0,591
Self-Efficacy	0,771	0,811	0,509

Table 3 shows a strong relationship between the variables, with all categories having AVE values greater than 0.5 (Hair Jr. et al., 2017). The average reliability scores ranged from 0.811 to 0.884, as presented in Table 3. Cronbach's alpha scores ranged from 0.771 to 0.876. Convergent validity is established when each construct's value equals or exceeds 0.70 (Hair et al., 2011).

The PLS-SEM findings focused primarily on two models: the measurement model, which was evaluated for internal consistency reliability, convergent validity, and discriminant validity (Hair Jr et al., 2017). Cronbach's alpha and CR were used to assess internal consistency. For a construct to be considered reliable, its AVE value must be equal to or greater than 0.50, and all item loadings must exceed 0.70 (Hair Jr et al., 2017). Both CR and Cronbach's alpha values should exceed 0.7 for a construct to be deemed valid (Fornell & Larcker, 1981).

We evaluated discriminant validity using two distinct approaches. The first approach, proposed by Fornell & Larcker (1981), considers discriminant validity achieved when the correlation between constructs is less than the square root of the AVE estimates for each construct. The second approach utilizes HTMT ratios, with a criterion threshold of 0.90 for discriminant validity (Henseler et al., 2015).

Discriminant Validity

Discriminant validity refers to the extent to which a test or measure is distinct from other tests or measures that assess different constructs. Specifically, it verifies whether a test designed to assess one variable is inconsistent with other tests that evaluate different variables (Hubley, 2014). This study employs discriminant validity. This is a measure of the lack of correlation between a test and other tests that measure different constructs. It ensures that the test accurately measures the intended variable and not an unrelated factor. A test with a high discriminant validity accurately measures only the intended constructs, which is crucial for establishing construct validity. Ensuring the validity of a measure is crucial to accurately assess the intended construct and avoid any confounding factors (Voorhees et al., 2016). The primary objective of discriminant validity is to demonstrate that a test exhibits no significant correlation with measures of distinct constructs. This aids in establishing the construct validity by ensuring that the test does not assess factors that were not intended to be assessed.

A concept achieves discriminant validity when the amount of variance shared within the concept (AVE) exceeds the variance between different concepts. AVE scores show how distinct the concept is compared to others (Hair & Alamer, 2022). When evaluating discriminant validity, Henseler et al. (2015) suggest using the HTMT. Discriminant validity is confirmed if the HTMT ratios between constructs are statistically different. Therefore, Table 4 shows that discriminant validity is achieved for each of the constructs.

As presented in Table 4, all HTMT ratios were below the threshold of 0.90 (Hair Jr et al., 2017; Henseler et al., 2015), and the square root of AVE estimates for all pairs of constructs exceeded the corresponding construct correlations (Chin, 1998). These findings confirm discriminant validity. Table 5 presents the Fornell-Larcker criterion, which asserts that each construct shares more variance with its own measurement items than with items measuring other constructs. Thus, the Fornell-Larcker criterion employed in this study is deemed satisfactory.

Table 4

Heterotrait-Monotrait Ratio of Correlations (HTMT)

	DL	EE	EI	EM	SE	SE x EM	SE x EE	SE x DL
DL								
EE		0,889						
EI		0,862	0,852					
EM		0,858	0,850	0,761				

SE	0,854	0,711	0,834	0,681			
SE x EM	0,442	0,482	0,503	0,504	0,331		
SE x EE	0,445	0,446	0,502	0,493	0,318	0,848	
SE x DL	0,548	0,438	0,551	0,442	0,360	0,786	0,692

Table 5

Fornell-larcker criterion

Variable	Digital Literacy	Entrepreneurship Education	Entrepreneurship Intention	Entrepreneurship Mindset	Self-Efficacy
Digital Literacy	0,863				
Entrepreneurship Education	0,688	0,814			
Entrepreneurship Intention	0,856	0,785	0,829		
Entrepreneurship Mindset	0,771	0,741	0,753	0,769	
Self-Efficacy	0,743	0,594	0,727	0,586	0,713

Data Collection

The documentation of research should include a comprehensive description of the study's extent, the sample used for research, the context in which the research took place, and the procedures followed for collecting and analyzing data. For this study, each and every present student enrolled in the engineering faculty was provided with a questionnaire, and all of them were subsequently returned. Respondents completed the survey by accessing a hyperlink after providing their information via an online form. Once the questionnaires were returned in acceptable condition and respondents met eligibility criteria, the data tabulation phase, validation using SmartPLS software, and hypothesis testing were conducted.

Data analysis

PLS-SEM is a superior method for statistical analysis, particularly beneficial when dealing with numerous variables that are challenging to measure compared to traditional inferential regression or statistics. This is particularly relevant in contexts such as online surveys where user participation is voluntary. Researchers employed PLS-SEM to analyze relationships between variables in the theoretical model and identify causal factors influencing observed outcomes (J. Hair et al., 2017). Inferential regression primarily examines the associations between independent and dependent variables, employing a fundamental methodology. PLS-SEM, in contrast, has the capability to analyze complex interconnections between variables. Additionally, it permits the representation of

latent variables, which are unobservable characteristics that have a substantial influence on the model.

PLS-SEM is preferred for analyzing intentional online survey data over other approaches due to its capability to handle complex interactions between variables, model latent variables, and accommodate small sample sizes that do not adhere to a normal distribution (J. Hair et al., 2017). This method offers a robust means of analyzing data derived from intentional online surveys, which often involve interconnected components with intricate relationships that vary across different groups.

PLS-SEM is preferred when the goal is to identify significant variables, while Covariance-based Structural Equation Modeling (CB-SEM) (J. Hair et al., 2017). In this study, the focus on entrepreneurship education and college students' aspirations to become entrepreneurs led to the choice of PLS-SEM for data analysis. Specifically, the study investigated components such as entrepreneurial mindset, proficiency in technology use, and self-confidence.

PLS-SEM is recommended when the strict assumptions of traditional multivariate approaches like CB-SEM cannot be met. Researchers found significant deviations from normality ($p < 0.05$) across all items, as indicated by Shapiro-Wilk, Kolmogorov-Smirnov, and other normality tests (J. Hair et al., 2017). Consequently, the authors recommended employing a nonparametric method like PLS-SEM instead of a parametric method such as CB-SEM for analyzing the data.

After validating the measurement model, a nonparametric bootstrap approach was employed to assess the structural model. In the study conducted by J. Hair et al. (2017), three interaction terms and one mediator were used to examine factors influencing individuals' intentions to pursue entrepreneurship. The process involved two phases for generating interaction terms, given all categories were reflective. The analysis aimed to determine the significant impact of the mediator, as indicated by J. Hair et al. (2017). Using 5000 bootstrap samples, as specified by the authors, J. Hair et al. (2017). One-tailed tests were employed due to the fact that all of the study hypotheses were directed in a specific direction. In table 6, it displays the r-square where this is the amount of variation of each variable in this study, where 0.25 is at a low level, 0.50 is a moderate level and 0.75 is a high level (J. F. Hair et al., 2019). Where in this study the entrepreneurship education variable is at a moderate level, entrepreneurship intention is at a high level, then entrepreneurship mindset is at a high level.

Table 6

R-Square

Variable	R-square	R-square adjusted	Varians
Entrepreneurship Education	0,473	0,472	Moderate
Entrepreneurship Intention	0,973	0,973	High
Entrepreneurship Mindset	0,778	0,777	High

Findings**Assumption Test****Normality**

A normality test can be employed to ascertain if the residuals of a regression model adhere to a normal distribution. In order for the regression model to achieve optimal performance, it is necessary for the residuals to have a normal distribution and have a uniform spread. It is imperative to guarantee that all variables adhere to normalcy, even if only a few do not. It is crucial to ensure that all variables in your regression model adhere to a normal distribution. It is crucial to emphasize that the residual values in regression models are not required to adhere to a normal distribution, unlike the model's components. In an optimal regression model, the residuals would exhibit a close resemblance or alignment with the normal distribution. The normality of the residuals was evaluated using the Kolmogorov-Smirnov test in this study. If the p-value obtained from this test is higher than 0.05, it can be concluded that the data set conforms to a normal distribution.

Table 7

Normality Test Output

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		536
Normal Parameters ^{a,b}	Mean	0,0000000
	Std. Deviation	0,93346422
Most Extreme Differences	Absolute	0,042
	Positive	0,042
	Negative	-0,027
Test Statistic		0,042
Asymp. Sig. (2-tailed)		.124 ^c

a. Test distribution is Normal.
b. Calculated from data.

At a significance level of 0.05, the one-sample Kolmogorov-Smirnov test is illustrated in Table 7. According to this analysis, the data exhibits a normal distribution. The study utilized graphical methods to assess the normality of different phenomena. When residuals conform to a normal distribution, the observed data closely aligns with the fitted line. Figure 2 illustrates a P-plot graph, demonstrating the normal distribution of the data.

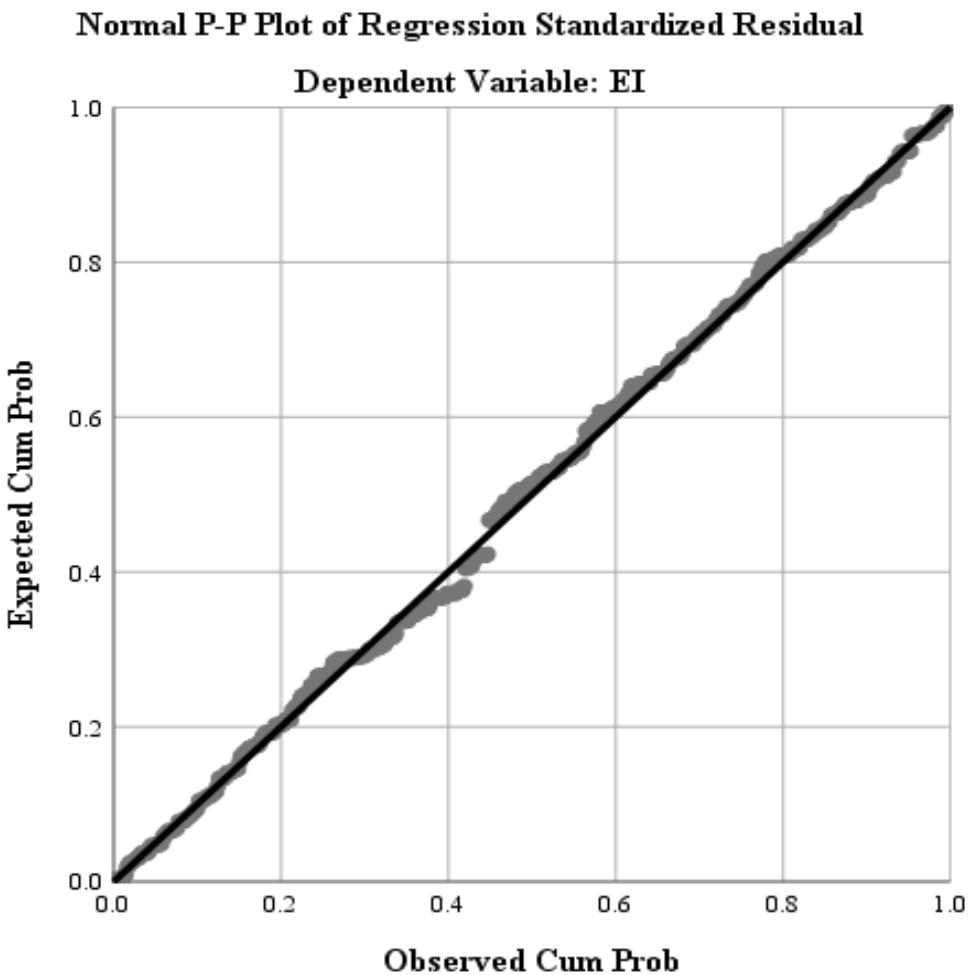


Figure 2. Normality Test Graphic

Multicollinearity

To ensure the absence of multicollinearity in the data under investigation, it is crucial to thoroughly examine the correlation matrix, variance inflation factor (VIF), and tolerance values. These

diagnostic tools assess the degree of interdependence among variables in a regression model that are not directly related. Multicollinearity tests are fundamental in regression analysis for understanding relationships among independent variables. Upon reviewing these components, typically, the t-statistic is expected to be smaller than the critical t-value due to the substantial standard error. However, insufficient information may hinder a definitive determination of the relationship between the variables.

Before advancing the study, it is critical to establish the interconnections among the various components. A tolerance value exceeding 0.05 indicates no statistically significant correlation among the independent variables. It's important to note that none of the sections exhibit an association value exceeding 95%. Additionally, all independent variables in the VIF analysis have VIF values below 10, indicating minimal interrelationships among them. Table 8 confirms the absence of multicollinearity among the components examined in the regression analysis.

Table 8

Multicollinearity, Autocorrelation, Heteroscedasticity Test

Model	Multicollinearity		Autocorrelation		Heteroscedasticity		Results
	Tolerance	VIF	DW	t	Sig.		
1							
Multicollinearit							No Multicollinearity
y							
EE	0,277	3,610					
EM	0,243	4,112					
DL	0,342	2,925					
SE	0,480	2,085					
2							No Autocorrelation
Durbin-Watson	2,124						
3							No Heteroscedasticity
Glejser Test							
EE			0,867	0,387			
EM			0,066	0,948			
DL			-0,256	0,798			
SE			-0,323	0,747			

Incorporating regression analysis into the Glejser test improves its accuracy. The quantity of leftovers is the sole component that remains constant and is unaffected by other variables. This characteristic not only enhances the test's usability but also improves its capability to identify statistically significant correlations. If the number exceeds 0.05, all data derived from the criteria

used in this investigation are deemed statistically significant. Additionally, the autocorrelation test in a linear regression model examines the relationships between errors made at time "t" and those made at time "t-1".

The primary aim of this study is to identify any biases in the data and ascertain if there is a correlation between two phenomena. If no correlations exist within the data, the regression model cannot be applied, indicating a potential issue with autocorrelation. The dataset ranges from a minimum value of 1,837 to a maximum value of 1,869, which can typically be found under the "magnitude" section of the journal. This study specifically seeks to measure the disparity between the dU score and both the Durbin-Watson score and the 4-dU score. Currently, no statistically significant correlations were observed among the data points.

Researchers employ the heteroscedasticity test to investigate why residuals in a regression model do not exhibit uniform spread patterns. The concept of homoscedasticity is pivotal in statistics, emphasizing the need for constant residual variance across datasets. Heteroscedasticity occurs when the level of residual variability varies across different time periods. Importantly, homoscedastic and heteroscedastic distributions can coexist without contradiction. Maintaining a consistent standard deviation is essential for achieving homoscedasticity. Heteroscedasticity, which signifies the absence of homoscedasticity, distinguishes between different regression models. In discussions of homoscedasticity, the presence of heteroscedasticity indicates its absence. The results of the classic assumption tests in this study indicate the absence of multicollinearity, autocorrelation, and heteroscedasticity.

Structural models and Hypotheses Testing

The measurement model and structural equation model (SEM) were assessed using partial least squares structural equation modeling (PLS-SEM). Both the discriminant and convergent validity of the notion were examined to verify its accuracy.

The coefficients and their significance levels for each endogenous construct are depicted in Figure 3, with detailed values provided in Table 9. Table 10 presents the effect sizes of each accepted hypothesis, where an f-square value of 0.02 indicates a weak effect, 0.15 denotes a moderate effect, and 0.35 signifies a high effect (J. Hair et al., 2017). Hypothesis 1 postulates that digital literacy positively affect entrepreneurship education ($\beta = 0.688$, $p = 0.000$), with a high impact indicated by an f-square value of 0.897. Digital literacy gives people the skills to succeed in the digital world, improving entrepreneurship education. This includes learning to use digital devices, the internet,

and social media for business. Thus, students gain a deeper understanding of digital technologies and their use in business, improving their entrepreneurial skills. Digital literacy boosts higher education entrepreneurship education. It enhances students' skills, knowledge, and goals for the digital economy and fosters creativity, innovation, and practicality. Digital literacy in entrepreneurship education programs gives students the skills and knowledge they need to succeed in modern business.

Hypothesis 2 finds that digital literacy positively affects entrepreneurship mindset ($\beta = 0.368$, $p = 0.000$), with an associated f-square value of 0.319, reflecting a strong influence. Entrepreneurship education includes digital literacy for digital success. Business-related digital devices, internet, and social media skills are included. Students learn how to use digital technologies in business, improving their entrepreneurial skills. Digital literacy teaches students how to run online and computer businesses in the digital economy. Data management, business analysis, and online marketing. Digital literacy strongly influences college students' entrepreneurial ambitions. Student performance, learning, and goal-setting improve. It develops creativity, innovation, and practical skills for the digital economy. Universities can prepare students for modern business by teaching digital literacy in entrepreneurship programs.

Finally, Hypothesis 3 confirms that entrepreneurship education positively affect entrepreneurship mindset ($\beta = 0.587$, $p = 0.000$), with an f-square value of 0.823, indicating a high impact as well. Entrepreneurship education teaches business planning, financial management, product marketing, and innovation. Students can identify and exploit market business opportunities with this basic understanding. Entrepreneurship education gives students the knowledge, skills, and support they need to become entrepreneurs. This motivation helps students view entrepreneurial endeavors positively and encourages them to start their own business. Entrepreneurship education gives people the skills, knowledge, and support they need to become entrepreneurs. This improves their expertise, encourages creativity, and changes their business mindset. Entrepreneurship education combines practical experience with digital technology skills to prepare students for modern business.

Hypothesis 4 posits that digital literacy positively affect entrepreneurship intention ($\beta = 0.644$, $p = 0.000$), with a high impact indicated by an f-square value of 3.730. Digital literacy improves the use of ICT in business operations, which increases higher education students' entrepreneurship intentions. This includes mastering digital devices, the internet, and social media for business

goals. Digital literacy helps students navigate and use various media formats, which helps them engage with entrepreneurial content and news. Online visibility and digital marketing make this skill essential for modern entrepreneurs. Digital literacy strongly influences higher education students' entrepreneurship intentions. They gain skills, knowledge, and goals for the digital economy and develop creativity, innovation, and practicality. Incorporating digital literacy into entrepreneurship education programs gives students the skills and resources they need to succeed in modern business.

Hypothesis 5 suggests that entrepreneurship education positively and significantly affects entrepreneurship intention ($\beta = 0.109$, $p = 0.000$), with an associated f-square value of 0.121, denoting a high influence. Entrepreneurship education helps college students develop a strong entrepreneurial mindset by providing the knowledge, skills, and support they need. Introducing students to entrepreneurship sparks their interest and encourages them to start their own businesses. This motivation helps students see the benefits of entrepreneurship and act. Entrepreneurship education gives college students the knowledge, skills, and support to start their own businesses. This improves their expertise, encourages creativity, and changes their business mindset. Entrepreneurship education combines practical experience with digital technology skills to prepare students for modern business.

Lastly, Hypothesis 6 states that entrepreneurship mindset positively affects entrepreneurship intention ($\beta = 0.290$, $p = 0.000$), with an f-square value of 0.646, indicating a strong influence. An entrepreneurial mindset in higher education students boosts their entrepreneurship intentions. This mindset encourages proactive and creative business startup. Education helps students spot and seize market entrepreneurial opportunities. This involves seeing challenges as opportunities for growth and finding solutions, which strengthens their entrepreneurial drive. The entrepreneurial mindset boosts higher education students' entrepreneurship intentions. It gives them the knowledge, skills, and drive to start and run their own businesses. An educational system that emphasizes opportunity, self-sufficiency, analytical thinking, collaboration, flexibility, and creativity fosters this mindset.

Based on the analysis, Hypothesis 7 indicates that entrepreneurship mindset mediates the relationship between entrepreneurship education and entrepreneurship intention ($\beta = 0.170$, $p = 0.000$). An entrepreneurial mindset increases college students' desire to start businesses. A forward-thinking and proactive approach to starting a business can be achieved by adopting this

mindset. Students with the right education can spot startup and other entrepreneurial opportunities. This involves seeing obstacles as opportunities for growth and finding solutions, which boosts their confidence in pursuing entrepreneurial ideas. Higher education students with an entrepreneurial mindset are more likely to start their own businesses. This learning opportunity gives people the drive, determination, and basic knowledge to start and run their own businesses. This perspective is strengthened by an educational system that values proactivity, self-reliance, analytical reasoning, collaboration, flexibility, and creativity.

Hypothesis 8 suggests that entrepreneurship mindset mediates the relationship between digital literacy and entrepreneurship intention ($\beta = 0.107$, $p = 0.000$). A thorough entrepreneurship education and the direct impact of entrepreneurial passion and role models are highlighted by the absence of self-efficacy as a moderating factor in the relationship between entrepreneurial mindset and intention among higher education students. Personal motivation is influenced by self-efficacy, but entrepreneurial intentions are not. Instead of self-efficacy, schools should promote entrepreneurial thinking through various methods.

Based on the moderation analysis, Hypothesis 9 suggests that self-efficacy ($\beta = 0.029$, $p = 0.095$) has a slightly positive impact on the relationship between entrepreneurship mindset and entrepreneurship intention. This indicates that self-efficacy does not have a substantial impact on the influence of an entrepreneurial mindset on intention. Self-efficacy enhances entrepreneurship by instilling individuals with the assurance of achieving success in their business endeavors. Self-assurance enhances the willingness to take action and the receptiveness to novel concepts when embarking on a business venture. Digital literacy equips individuals with the necessary competencies to thrive in the online realm, thereby fostering self-assurance. Students who possess self-assurance and proficiency in technology are more inclined to discover and utilize diverse forms of media, thereby facilitating their engagement with business news and content. The entrepreneurial mindset and aspiration of college students to establish a business are significantly shaped by their self-efficacy. This enhances their proficiency, fosters innovation, and transforms their entrepreneurial mindset. Entrepreneurship education integrates hands-on experience with digital technology proficiency to equip students for contemporary business.

Conversely, Hypothesis 10 finds that self-efficacy has a negligible negative impact ($\beta = -0.018$, $p = 0.110$) on entrepreneurial intention, suggesting that it does not affect students' business intentions following entrepreneurship education. Self-efficacy refers to an individual's belief in their ability

to achieve success in specific situations or tasks. Entrepreneurs must possess a strong conviction in their capacity to initiate and manage businesses. Providing students with instruction on entrepreneurship equips them with the necessary skills, although some individuals may lack confidence in their ability to effectively apply these skills. This issue can be resolved through the implementation of training or mentorship programs that enhance self-efficacy. Acquiring new knowledge and improving one's self-perception is crucial, as there was a negative relationship between self-efficacy and both entrepreneurial education and entrepreneurial intention among college students. Students acquire entrepreneurial skills in educational institutions, however, they require self-assurance in order to effectively apply these skills. Participating in mentorship and training programs that enhance self-assurance can be beneficial.

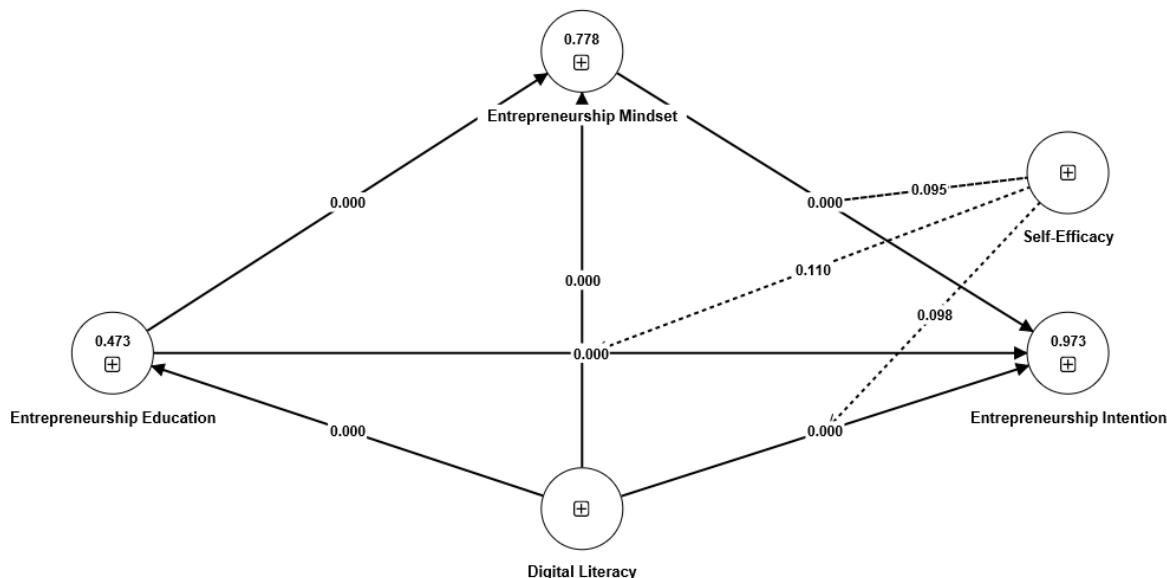
Moreover, Hypothesis 11 concludes that self-efficacy ($\beta = -0.024$, $p = 0.098$) does not moderate the relationship between entrepreneurial mindset and intention. Specifically, the correlation between an individual's intention and entrepreneurial mindset remains unaffected by their level of self-efficacy. Self-efficacy significantly influences college students' entrepreneurial intentions, however, it does not impact the relationship between their entrepreneurial mindset and intentions. The caliber of entrepreneurship education and the accessibility of resources significantly impact individuals' inclination to pursue entrepreneurship. This setting has the potential to cultivate a mindset that is conducive to entrepreneurship, going beyond just having confidence in one's abilities. Self-efficacy does not have a moderating effect on the relationship between possessing an entrepreneurial mindset and desiring to become an entrepreneur among college students, emphasizing the necessity of teaching entrepreneurship. The aspiration to become an entrepreneur and the influence of role models can both exert a direct impact. Although individuals still require self-efficacy in order to take action, it does not influence their inclination to become entrepreneurs. Schools should cultivate an entrepreneurial mindset through various means rather than solely relying on self-efficacy.

Table 9

Hypothesis Testing

Hypothesis	B	T statistics	P values	Results
H1. Digital Literacy -> Entrepreneurship Education	0,688	25,344	0,000	Accepted
H2. Digital Literacy -> Entrepreneurship Mindset	0,368	9,471	0,000	Accepted
H3. Entrepreneurship Education -> Entrepreneurship Mindset	0,587	15,726	0,000	Accepted
H4. Digital Literacy -> Entrepreneurship Intention	0,644	37,277	0,000	Accepted

H5. Entrepreneurship Education -> Entrepreneurship Intention	0,109	8,474	0,000	Accepted
H6. Entrepreneurship Mindset -> Entrepreneurship Intention	0,290	16,233	0,000	Accepted
H7. Entrepreneurship Education -> Entrepreneurship Mindset -> Entrepreneurship Intention	0,170	13,471	0,000	Accepted
H8. Digital Literacy -> Entrepreneurship Mindset -> Entrepreneurship Intention	0,107	7,375	0,000	Accepted
H9. Self-Efficacy x Entrepreneurship Mindset -> Entrepreneurship Intention	0,029	1,672	0,095	Rejected
H10. Self-Efficacy x Entrepreneurship Education -> Entrepreneurship Intention	-0,018	1,599	0,110	Rejected
H11. Self-Efficacy x Digital Literacy -> Entrepreneurship Intention	-0,024	1,657	0,098	Rejected

**Figure 3. Research Model****Table 10**

Effect Size

Hypothesis	f-square	Effect
H1. Digital Literacy -> Entrepreneurship Education	0,897	High
H2. Digital Literacy -> Entrepreneurship Mindset	0,319	High
H3. Entrepreneurship Education -> Entrepreneurship Mindset	0,823	High
H4. Digital Literacy -> Entrepreneurship Intention	3,730	High
H5. Entrepreneurship Education -> Entrepreneurship Intention	0,121	High
H6. Entrepreneurship Mindset -> Entrepreneurship Intention	0,646	High

Discussion

University graduates not only contribute to the workforce but also foster entrepreneurial readiness in various fields (Akkermans et al., 2021; Maryanti et al., 2020). In Indonesia, with a very high demographic dividend, job competition has intensified (Rachman et al., 2022). Entrepreneurship education implemented in universities plays a vital role in enhancing students' entrepreneurial intentions (Lv et al., 2021).

Colleges and universities need to know what makes people want to start their own businesses so they can help students do well in their fields and turn out grads who are skilled. Because the quality of schooling, how well you can use technology, and having an entrepreneurial spirit can all change how people act, it is important to understand these factors. Universities have a big impact on students' desire to be entrepreneurs by offering classes that encourage an entrepreneurial attitude and teach specific skills. People who want to be entrepreneurs need to be able to think critically, solve problems, and use technology well. By focusing on these areas, universities can produce high-quality graduates and help students find good jobs. In this way, universities not only keep graduates from being unemployed, but they also create workers who can meet present needs. So, it's important to know what makes people want to start their own business. Digital literacy is an important part of entrepreneurship education because it gives people the skills they need to get around and achieve in the digital world. This includes learning how to use digital devices, the internet, and social media and other digital platforms for business reasons efficiently. This helps students learn more about digital technologies and how they can be used in business, which improves their general ability to be entrepreneurs. It is clear that digital literacy has a good effect on teaching entrepreneurship in higher education. It improves students' abilities, skills, and goals, getting them ready for the digital market and encouraging creativity, new ideas, and useful skills. Businesses can give their kids the skills and information they need to do well in today's business world by teaching digital literacy along with entrepreneurship. Human behavior is influenced by education, computer proficiency and an entrepreneurial mindset (Young et al., 2020; Khan, 2022; Beliaeva et al., 2019). Advanced skills in technology and digital tools can greatly enhance the effectiveness of entrepreneurship education. Digital literacy positively affects the impact of such education, making a deep understanding of these factors essential for developing successful entrepreneurs.

Gaining a profound comprehension of digital technology can greatly improve a student's capacity to succeed in entrepreneurship and excel in online business ventures. Emphasizing the significant impact of digital literacy on entrepreneurship education underscores the essential requirement to integrate digital skills into entrepreneurial learning. These programs equip students with the essential skills required to excel in the digital era and effectively harness their entrepreneurial aptitude. Entrepreneurship education necessitates digital literacy as it equips individuals with the necessary competencies to navigate and thrive in a digitalized society. This support literature (Hamburg et al., 2019; Hamburg et al., 2019; Bican & Brem, 2020), mastering the operation of digital devices, harnessing the full potential of the internet, and effectively utilizing social media and other digital platforms for business endeavors are all encompassed in this. Ultimately, this enhances students' comprehension of digital technologies and their application in the business realm, thereby enhancing their overall entrepreneurial aptitude. Acquiring digital literacy equips students with the necessary competencies to effectively manage businesses through the use of computers and the internet, thereby enhancing their performance in the digital economy. These encompass disciplines such as business analysis, data management, and online marketing. Digital literacy significantly influences college students' inclination toward entrepreneurship. It facilitates students in enhancing their skills, acquiring new knowledge, and establishing fresh objectives. Additionally, it equips individuals for the digital economy and fosters creativity, innovation, and practical skills. Academic institutions can equip their students with the necessary skills and resources to thrive in contemporary business environments by incorporating digital literacy into entrepreneurship programs.

An essential objective of this educational initiative should be to foster the cultivation of an entrepreneurial mindset among its potential students. For educational institutions to effectively retain their ability to attract and develop skilled personnel, it is crucial for them to comprehend the factors that drive individuals to embark on entrepreneurial ventures. The results suggest that possessing an entrepreneurial mindset is a contributing factor to the elevated level of success attained in this association. These findings build upon existing literature that has explored this topic (Mulyono et al., 2023; Islami, 2019; Setyawati et al., 2022). Hence, the main emphasis of educational endeavors should be on cultivating the growth of these abilities as they are indispensable. For educational institutions to effectively nurture talented individuals, it is crucial for them to possess a comprehensive comprehension of the factors that drive individuals to

participate in entrepreneurial pursuits. An essential step towards achieving this goal is to provide people with education regarding the diverse internal and external factors that impact their probability of initiating a business. Furthermore, it is crucial to furnish the necessary resources to foster an entrepreneurial mindset.

These findings build upon existing literature that has explored this topic (Astiana et al., 2022; Doan Thi Thanh & Viet, 2023; Shah et al., 2020). Providing individuals with knowledge about the various internal and external factors that influence their entrepreneurial aspirations is crucial for obtaining a comprehensive understanding. Equipping individuals with the necessary resources to cultivate an entrepreneurial mindset holds equal significance. This study examines the correlation between university students' entrepreneurial aspirations and their attitude towards entrepreneurship, technological knowledge, and educational background. This encompasses acquiring proficiency in operating digital devices, harnessing the full potential of the internet, and leveraging social media and other digital platforms for business-related objectives. Acquiring digital literacy equips students with the necessary skills to efficiently locate and utilize various forms of media, thereby facilitating their engagement with business news and content. Proficiency in this skill is crucial for contemporary entrepreneurs as digital marketing and online visibility are indispensable. Digital literacy significantly influences college students' aspirations to become entrepreneurs. It enhances their skills, knowledge, and objectives, equipping them for the digital economy and fostering creativity, innovation, and practical abilities. Academic institutions can equip their students with the necessary skills and resources to thrive in contemporary business environments by incorporating digital literacy into entrepreneurship programs.

Additionally, the study investigated the impact of an entrepreneurial attitude on the correlation between entrepreneurship education and the creation of new enterprises, as well as the link between digital literacy and start-ups. Entrepreneurship education has a significant impact on college students' desire to become entrepreneurs by providing them with the essential knowledge, skills, and support to develop a strong entrepreneurial mindset. Introducing students to entrepreneurship fosters their interest in the subject and inspires them to actively pursue their own business ventures. This aspect of motivation allows students to recognize the advantages of entrepreneurial activities and motivates them to act, consistent with previous research (Prayoga et al., 2023; Akbari et al., 2024), entrepreneurship education increases college students' motivation to start their own businesses by providing them with the essential knowledge, skills, and support.

This improves their expertise in their area of expertise, promotes creativity and original ideas, and changes their mindset towards starting a business venture. Entrepreneurship education empowers students with the essential skills and knowledge to excel in the modern business environment by combining hands-on experience with expertise in digital technology.

These findings highlight the fact that students' attitudes toward entrepreneurship have an effect on how they react to entrepreneurship education and digital literacy, which in turn has an effect on their propensity to start their own businesses. The study highlights the fact that individuals are driven to establish businesses due to their entrepreneurial mindset. It emphasizes the importance of cultivating this mindset among students in order to increase the likelihood that they will successfully launch a company. Furthermore, the research highlights the significant role that digital literacy plays in the realm of innovation and business. According to the existing body of research (Mustain et al., 2023; Widiasih & Darma, 2021) students who possess advanced technological skills are more likely to place an emphasis on entrepreneurship.

Furthermore, the research examines how self-efficacy relates to both the inclination and mindset of individuals toward pursuing entrepreneurship. Self-efficacy refers to a person's belief in their own capabilities and skills. According to the study, self-efficacy plays a vital role in affecting both intention to start a business and successful execution of entrepreneurial endeavors. Individuals with high self-efficacy are more motivated to pursue entrepreneurship and demonstrate greater commitment and effort toward achieving their entrepreneurial goals. This underscores the importance of fostering self-belief among aspiring entrepreneurs to enhance their likelihood of entrepreneurial success, this finding are inline with exist literature (Saptono et al., 2020; Jiatong et al., 2021; Sun et al., 2023). An entrepreneurial mindset is positively correlated with college students' aspirations to start their own businesses. Developing a progressive and proactive mindset is key to successfully initiating a business venture. With a sufficient level of education, students are more adept at identifying potential business opportunities in the market for startups and other entrepreneurial ventures. More precisely, this involves perceiving challenges as chances for growth and devising strategies, which ultimately enhances their self-assurance in their capacity to pursue entrepreneurial concepts. Students pursuing higher education and aspiring to establish their own businesses are more likely to achieve success if they possess an entrepreneurial mindset. Individuals possess the motivation, resolve, and essential expertise required to initiate and oversee their own enterprises due to this educational opportunity. An educational system that prioritizes

qualities such as initiative, independence, critical thinking, teamwork, adaptability, and innovation plays a significant role in fostering this perspective to a greater degree.

The study offers a thorough examination of the elements that influence college students to initiate their own entrepreneurial ventures. Elements such as having a proactive and innovative mindset, a thorough understanding of the industry, and adept use of technology can significantly affect an individual's inclination toward entrepreneurship. By encouraging and facilitating these attributes, universities and educators can inspire more students to engage in entrepreneurial pursuits. The lack of belief in one's abilities as a moderating factor in the connection between having an entrepreneurial mindset and the intention to become an entrepreneur among higher education students highlights the importance of a comprehensive entrepreneurship education and the direct influence of factors like passion for entrepreneurship and having successful role models. This study give more insight about this topic as the literature exist (Mustain, 2023; Nguyen et al., 2024). While self-efficacy plays a crucial role in personal motivation, its influence on shaping entrepreneurial intentions is not substantial. Educational institutions should place a strong emphasis on fostering an entrepreneurial mindset through a variety of strategies, rather than solely relying on self-efficacy.

This suggests that self-efficacy does not exert a substantial influence on the connection between an entrepreneurial mindset and the intention to participate in entrepreneurship. Possessing a robust sense of self-efficacy can significantly enhance an individual's probability of achieving success as an entrepreneur. It cultivates a sense of self-confidence in one's ability to succeed in their entrepreneurial endeavors. Cultivating a robust sense of self-assurance can significantly enhance your propensity to undertake risks and wholeheartedly embrace novel concepts as you embark on a business venture. Proficiency in digital literacy is essential for individuals to excel in a digital setting. It enables individuals to effectively navigate and thrive in the digital realm, enhancing their self-confidence and belief in their own abilities. These findings build upon existing literature that has explored this topic (Jiatong et al., 2021; Li et al., 2023; Akbari et al., 2024). Students with self-assurance and proficient technological abilities are more inclined to effectively discover and utilize diverse forms of media, thereby enabling them to actively interact with business news and content. The degree of self-efficacy has a notable impact on the correlation between an entrepreneurial mindset and the aspiration to initiate a business among college students. This enhances their proficiency in their domain, fosters innovation and novel concepts, and shifts their mindset towards

embarking on a business endeavor. Entrepreneurship education equips students with the necessary skills and knowledge to thrive in the contemporary business landscape, by integrating practical experience with proficiency in digital technology.

In this study, entrepreneurship mindset, entrepreneurship education, and digital literacy are identified as the main drivers of entrepreneurship intention. The study findings reveal that students who possess a strong entrepreneurship mindset, receive adequate entrepreneurship education, and are proficient in digital literacy are more inclined to have strong intentions to pursue entrepreneurship. Self-efficacy refers to the belief in one's own ability to excel in specific situations or successfully accomplish a task. Believing in oneself and being confident in one's ability to start and run a business is crucial to the idea of entrepreneurship. While students may seem to possess the necessary skills through their involvement in entrepreneurial education, there may be a slight variation in their level of confidence in effectively applying these skills, these findings are give more insight about this topic (Shah et al., 2020; Cong Doanh, 2021; Dar et al., 2023). One potential solution to address this matter is to offer individuals supplementary training opportunities or establish mentorship programs that specifically focus on boosting self-confidence. The importance of gaining new knowledge and enhancing one's confidence is emphasized by the fact that there is a strong connection between self-belief and the relationship between entrepreneurial education and entrepreneurial intention in college students. Entrepreneurship education equips students with crucial skills; nevertheless, further measures are required to enhance students' self-assurance in their capacity to successfully utilize these skills for their own advantage. This can be achieved by implementing mentoring and training programs that prioritize the enhancement of individuals' self-assurance in their own abilities.

The investigation into the relationship between entrepreneurial mindset and intentions among college students found that self-efficacy has a substantial impact on entrepreneurial intentions. Nevertheless, self-efficacy does not have a significant impact on the relationship between entrepreneurial mindset and intentions. The educational environment, encompassing resource accessibility and the quality of entrepreneurship education, has a substantial influence on individuals' aspirations to engage in entrepreneurship. An environment like this can promote the development of a strong entrepreneurial mindset that is not solely dependent on an individual's self-perception of their ability to succeed. The absence of a moderating influence of self-efficacy on the correlation between possessing an entrepreneurial mindset and the intention to pursue

entrepreneurship among college students emphasizes the importance of offering comprehensive education on entrepreneurship with this topic. Moreover, it emphasizes the immediate influence of factors such as individuals with a strong inclination towards entrepreneurship and influential figures. Although self-efficacy remains crucial in motivating individuals to take action, its impact on individuals' aspirations to become entrepreneurs is relatively minimal. Instead of exclusively depending on self-efficacy, educational institutions should prioritize the cultivation of a strong entrepreneurial mindset through diverse methods.

This study examines the relationship between acquiring business knowledge and developing an entrepreneurial mindset, with a particular emphasis on the impact of digital literacy on the inclination to participate in entrepreneurship. The findings underscore the importance of cultivating a business-oriented mindset. The growing tendency of college students to start their own businesses is mainly driven by the impact of entrepreneurship courses and their proficiency in utilizing technology, which is further augmented by a forward-thinking mindset. This study examines the impact of self-efficacy on entrepreneurial mindset and aspirations. The findings of this study challenge the commonly held beliefs and prior research on entrepreneurship (Asimakopoulos et al., 2019; Doan Thi Thanh & Viet, 2023; Ferreira-Neto et al., 2023). They demonstrate that self-efficacy diminishes the connection between gaining entrepreneurship knowledge and the aspiration to establish a personal business. Prior research has shown that self-efficacy does not act as a mediator in the connection between digital skills and the propensity to initiate a business venture. Following this, we will examine the significant theoretical and applied consequences of these discoveries.

Implications

This research contributes to the existing knowledge base by exploring individuals with aspirations to establish their own businesses. Factors such as digital literacy, entrepreneurial mindset, and entrepreneurship education play pivotal roles in affecting college students' decisions to pursue entrepreneurship. Teaching digital skills and entrepreneurship in educational institutions enhances students' motivation and determination to start their own ventures. However, the study suggests that self-efficacy may diminish the likelihood of students aspiring to initiate their own commercial endeavors following their academic studies.

The results of this study make important contributions on two fronts. Academically, it underscores the pivotal roles of entrepreneurship mindset, entrepreneurship education, and digital literacy in

affecting students' intentions toward entrepreneurship. It emphasizes how insights gained from entrepreneurship education and digital literacy foster entrepreneurial mindsets and affect the desire to start businesses, thereby enriching existing literature and offering practical implications. Furthermore, these findings provide a foundational basis for further research to explore a broader scope, particularly regarding entrepreneurial behavior among university students.

Moreover, the findings offer valuable insights and carry important implications for Indonesian governments and higher education institutions. Firstly, educational institutions should enhance the delivery of entrepreneurship-focused courses. Introducing project-based entrepreneurship courses can effectively boost students' entrepreneurial intentions and behaviors. Additionally, the government should enhance entrepreneurship programs in universities by revitalizing curricula and implementing student initiatives. These efforts are crucial in addressing the challenge of rising educated unemployment, particularly in Indonesia.

Another critical finding is that self-efficacy diminishes entrepreneurial intentions affected by entrepreneurship education. It is essential for institutions to heed this insight and avoid overburdening entrepreneurship education, which could potentially decrease students' confidence in entrepreneurship and consequently reduce their intention to pursue it. In practice, it is crucial to make entrepreneurship education appear accessible and enjoyable to students. This approach can foster greater interest and engagement in entrepreneurial behaviors among students, encouraging them to explore and embrace entrepreneurial opportunities with enthusiasm.

Conclusion

Ultimately, this study demonstrates the significance of digital literacy, entrepreneurial skills, and self-assurance in influencing the entrepreneurial aspirations and achievements of college students. In response to the increasingly competitive job market, particularly in densely populated countries such as Indonesia, universities must impart the necessary skills to their students in order to adapt and excel in a rapidly evolving digital economy. The study demonstrates that possessing digital literacy significantly enhances students' ability to engage in business activities in the contemporary era. However, self-efficacy alone does not effectively facilitate the correlation between possessing an entrepreneurial mindset and the desire to initiate a business venture.

Entrepreneurship programs that impart technical skills are crucial in preparing students for the digital market. These programs foster the development of entrepreneurs into versatile individuals

who can proficiently utilize digital tools by promoting critical thinking, problem-solving, and proactive behavior. The findings indicate that self-efficacy plays a crucial role in motivating students to exert effort and enhance their self-assurance. However, it is essential to acknowledge that self-efficacy should not be the sole emphasis. What is required is a holistic approach that encompasses a nurturing educational setting, guidance from mentors, and practical exposure to real-life situations.

In general, universities should prioritize a comprehensive approach to educating students on entrepreneurship, with a particular emphasis on developing digital literacy skills. Not only will this enhance students' entrepreneurial readiness, but it will also equip them with the necessary skills to generate novel ideas and assume leadership roles in a rapidly evolving business landscape driven by emerging technologies. Integrating instruction in digital skills and business will enhance students' readiness to address contemporary challenges, thereby facilitating their success and reducing unemployment in an increasingly competitive job market.

This study contributes to existing knowledge by investigating the factors that drive college students to pursue entrepreneurship, with a specific focus on digital literacy, entrepreneurial mindset, and entrepreneurship skills. Evidence demonstrates that providing students with instruction in digital and business skills within educational institutions serves as a catalyst for their entrepreneurial endeavors. The study also indicates that students with high self-efficacy may have a lower likelihood of initiating a business venture following their graduation.

This study contributes to the field by demonstrating the impact of an entrepreneurial mindset, education, and digital literacy on students' entrepreneurial aspirations. Furthermore, it has an impact on the actuality. In order to address the issue of educated unemployment in Indonesia, it is recommended that universities implement project-based learning methods to enhance business courses, while also urging the government to make necessary modifications to university business programs.

Limitations and future research

Future research should address the limitations identified in this study. The sample was limited to current students of Universitas Negeri Padang, specifically those who had completed an entrepreneurship course, potentially affecting the findings. To validate the findings of this study, future studies could include individuals who are actively starting their own businesses or are strongly interested in entrepreneurship. Furthermore, the proposed framework could benefit from

more rigorous examination in subsequent research. The cross-sectional nature of this study restricts definitive conclusions about changes in students' intentions to start their own businesses over time. A promising direction for future investigation could involve longitudinal designs to assess individuals' entrepreneurial intentions before and after exposure to entrepreneurial education.

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